

# HAZARDOUS CHEMICAL DEFINITIONS

**Aerosol:** A product that is dispensed from an aerosol container by a propellant.

**Carbon Dioxide:** Non-flammable compressed gas utilized for beverage dispensing systems, extinguishing systems or proprietary processes.

**Carcinogens:** A chemical that is capable of causing cancer as defined by the International Agency for Research on cancer, is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program, or is regulated by OSHA as a carcinogen.

**Combustible Fibers:** Readily ignitable and free burning fibers such as cotton, sisal, henequen, jute, hemp, tow, cocoa fiber, oakum, baled waste, baled wastepaper, kapok, hay, straw, excelsior, Spanish moss and other like material.

**Combustible Liquids:** A liquid having a closed cup flash point at or above 100 degrees F. (38 degrees C.) Combustible liquids shall be subdivided as follows:

**Class II:** Liquids having a closed cup flash point at or above 100 degrees F. (38 degrees C.) and below 140 degrees F. (60 degrees C.).

**Class IIIA:** Liquids having a closed cup flash point at or above 140 degrees F. (60 degrees C.) and below 200 degrees F. (93 degrees C.).

**Class IIIB:** Liquids having a closed cup flash point at or above 200 degrees F. (93 degrees C.).

## Compressed Gases:

**Toxic:** A compressed gas meeting the definition of a toxic material below.

**Corrosive:** A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact.

**Flammable Gas:** A material which is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) (101 kPa) of pressure [a material that has a boiling point of 68°F (20°C) or less at 14.7 psia (101 kPa)] which:

1. Is ignitable at 14.7 psia (101 kPa) when in a mixture of 13 percent or less by volume with air; or
2. Has a flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower limit. The limits specified shall be determined at 14.7 psi (101 kPa) of pressure and a temperature of 68°F (20°C) in accordance with ASTM E 681.

**Liquefied Flammable Gas:** A fluid in the liquid state composed predominantly of methane and which may contain minor quantities of ethane, propane, nitrogen or other components normally found in natural gas.

**Liquefied Oxidizing Gas:** A gas that can support and accelerate combustion of other materials.

**Liquefied Petroleum Gas (LPG):** A material that is composed predominantly of the following hydrocarbons or mixtures of them: propane, propylene, butane (normal butane or isobutane) and butylenes.

**Corrosives:** A chemical that causes visible destruction of or irreversible alterations in living tissue at the point of contact.

**Cryogenic Liquid (Flammable):** Any liquid that has a boiling point below -200 degrees F. (-129 degrees C.) and is flammable in the vapor state.

**Cryogenic Liquid (Oxidizer):** A cryogenic agent that releases oxygen and will easily combine with fuels to burn. It is a liquid only at very low temperatures.

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**Explosive & Blasting Agent:** A chemical compound, mixture or device, the primary or common purpose of which is to function by explosion.

**Flammable Liquid:** Any liquid having a closed cup flash point below 100 degrees F. (38 degrees C.). Flammable liquids are further categorized into a group known as Class I Liquids. The Class I category is subdivided as follows:

**Class 1A:** Liquids having a flash point below 73 degrees F. (23 degrees C.) and having a boiling point below 100 degrees F. (38 degrees C.).

**Class 1B:** Liquids having a flash point below 73 degrees F. (23 degrees C.) and having a boiling point at or above 100 degrees F. (38 degrees C.).

**Class 1C:** Liquids having a flash point at or above 73 degrees F. (23 degrees C.) and below 100 degrees F. (38 degrees C.).

**Flammable Solid:** A solid, except a blasting agent or explosive, capable of causing fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which has an ignition temperature below 212 degrees F. (100 degrees C.) or which burns so vigorously and persistently when ignited as to create a serious hazard.

**Highly Toxic Material:** A material that produces a lethal dose or lethal concentration that falls within any of the following categories:

1. A chemical that has a median lethal dose (LD 50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
2. A chemical that has a median lethal dose (LD 50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
3. A chemical that has a median lethal concentration (LC 50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Mixtures of these materials with ordinary materials, such as water, might not warrant classification as highly toxic. While this system is basically simple in application, experienced, technically competent persons shall perform any hazard evaluation that is required for the precise categorization of this type of material.

**Toxic Material:** A chemical falling within any of the following categories:

A chemical that has a median lethal dose (LD 50) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each, **or,**

A chemical that has a median lethal dose (LD 50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each, **or,**

A chemical that has a median lethal concentration (LC 50) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

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**Irritating Material:** A chemical that is not corrosive, but causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

**Organic Peroxide:** An organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms have been replaced by an organic radical. Organic peroxides can pose an explosion hazard (detonation or deflagration) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time.

**Class 1:** Those formulations that are capable of deflagration but not detonation.

**Class 2:** Those formulations that burn very rapidly and that pose a moderate reactivity hazard.

**Class 3:** Those formulations that burn rapidly and that pose a moderate reactivity hazard.

**Oxidizer:** A material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials. Examples of other oxidizing gases include bromine, chlorine and fluorine.

**Class 1:** An oxidizer whose primary hazard is that it slightly increases the burning rate but which does not cause spontaneous ignition when it comes in contact with combustible materials.

**Class 2:** An oxidizer that will cause a moderate increase in the burning rate or that causes spontaneous ignition of combustible materials with which it comes in contact.

**Class 3:** An oxidizer that will cause a severe increase in the burning rate of combustible materials with which it comes in contact or that will undergo vigorous self-sustained decomposition due to contamination or exposure to heat.

**Class 4:** An oxidizer that can undergo an explosive reaction due to contamination or exposure to thermal or physical shock. In addition, the oxidizer will enhance the burning rate and can cause spontaneous ignition of combustibles.

**Poisonous Gas:** Any gas of such nature that a small amount of gas in the air is dangerous to life.

**Pyrophoric Materials:** A material that will spontaneously ignite in air at or below a temperature of 130 degrees F.

**Radioactive Materials:** Any material or combination of materials that spontaneously release ionizing radiation.

**Unstable (Reactive) Material:** Substances capable of rapidly undergoing chemical changes or decomposition. Materials that polymerize, decompose, condense or become self-reactive when exposed to air, water, heat, shock or pressure.

**Class 2:** Materials that readily undergo violent chemical change at elevated temperatures and pressures.

**Class 3:** Materials that, in themselves, are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation.

**Class 4:** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures.

**Water Reactive Material:** A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

**Class 2:** Materials that are capable of forming potentially explosive mixtures with water.

**Class 3:** Materials that react explosively with water without requiring heat or confinement.